CLAIMS

What is claimed is:

1. A flow control device for selectively closing a tubing string to fluid flow 1 2 therethrough, the device comprising: a housing defining a flowbore therethrough; 3 a radially inwardly projecting shell retained within the flowbore to provide a 4 flowbore portion having restricted diameter, the shell presenting a plug member seat; 5 a plug member shaped and sized to fit within the flowbore and be seated upon 6 the plug member seat; and 7 the shell being deformable to permit the plug member to pass through the 8 restricted diameter upon application of a predetermined amount of force to the plug 9 member. 10 2. The flow control device of claim 1 wherein the shell is elastically deformable. 1 3. The flow control device of claim 1 wherein the shell is plastically deformable. 1 4. The flow control device of claim 1 wherein the plug member is spherically 1 2 shaped.

The flow control device of claim 1 wherein the shell is formed of metal.

284-35906-US -9-

5.

1

1	6.	The flow control device of claim 1 wherein the shell is formed of elastomer.
1	7.	The flow control device of claim 1 wherein the shell is formed of plastic.
1	8.	The flow control device of claim 1 wherein the shell is formed of a composite
2	mater	ial.
1	9.	The flow control device of claim 1 wherein the shell is annular.
l	10.	The flow control device of claim 1 wherein the shell defines an annular fluid
2	chami	per.
l	11.	The flow control device of claim 10 wherein the annular fluid chamber is filled
2	with fl	
1	12.	The flow control device of claim 11 wherein the fluid comprises nitrogen.
1	13.	The flow control device of claim 11 wherein the fluid comprises water.
1	14.	The flow control device of claim 11 wherein the fluid comprises silicon type oil.
1	15.	A flow control device for selectively closing a tubing string to fluid flow
2	theret	hrough, the device comprising:

- a housing defining a flowbore therethrough;
- a radially inwardly projecting shell retained within the flowbore to provide a
- 5 flowbore portion having restricted diameter, the shell further presenting a plug member
- 6 seat; and
- the shell being deformable to permit a plug member to pass through the
- 8 restricted diameter upon application of a predetermined amount of force to the plug
- 9 member.
- 1 16. The flow control device of claim 15 wherein the shell is elastically deformable.
- 1 17. The flow control device of claim 15 wherein the shell is plastically deformable.
- 1 18. The flow control device of claim 15 further comprising a plug member shaped
- and sized to fit within the flowbore and be seated upon the plug member seat.
- 1 19. The flow control device of claim 15 wherein the shell defines an annular fluid
- 2 chamber that is filled with fluid.
- 1 20. The flow control device of claim 15 wherein the shell is substantially formed of a
- 2 metal alloy.
- 1 21. The flow control device of claim 15 wherein the shell is formed of an elastomeric
- 2 material.

- 1 22. The flow control device of claim 15 wherein the shell is formed of plastic.
- 1 23. The flow control device of claim 15 wherein the shell is formed of a composite 2 material.
- 24. A method of flow control within a production tubing string for temporarily blocking flow through the tubing string, the method comprising the steps of:
- incorporating a flow control device within a tubing string, the flow control device
 having a housing defining a flowbore therein, and a restricted throat portion within the
 flowbore formed by a radially inwardly projecting shell that presents a plug member
 seat;
- disposing a plug member within the tubing string to seat the plug member upon
 the plug member seat;
 - increasing fluid pressure within the tubing string above the plug member to a first level to create a fluid seal, thereby blocking fluid flow within the tubing string; and
- increasing fluid pressure within the tubing string above the plug member to a second level to force the plug member through the restricted throat portion and unblock the tubing string to fluid flow therethrough.
 - 25. The method of claim 24 further comprising the steps of:
- disposing a second plug member within the tubing string to seat upon the plug
 member seat;

9

10

1

- increasing fluid pressure within the tubing string above the second plug member
- 5 to said first level to create a fluid seal, thereby blocking fluid flow within the tubing
- 6 string.
- 1 26. The method of claim 25 further comprising the step of increasing fluid pressure
- within the tubing string above the second plug member to a second level to force the
- 3 second plug member through the restricted throat portion and unblock the tubing string
- 4 to fluid flow therethrough.